

ABSTRACT

[0051] A deep implanted region of a first conductivity type located below a transistor array of a pixel sensor cell and adjacent a doped region of a second conductivity type of a photodiode of the pixel sensor cell is disclosed. The deep implanted region reduces surface leakage and dark current and increases the capacitance of the photodiode by acting as a reflective barrier to photo-generated charge in the doped region of the second conductivity type of the photodiode. The deep implanted region also provides improved charge transfer from the charge collection region of the photodiode to a floating diffusion region adjacent the gate of the transfer transistor.